

RESPONSE TO RESTRICTION REQUIREMENT**Serial No. 10/777,026****Page 2 of 6****IN THE CLAIMS**

1. (Original) A method for removing a halogen-containing residue from a substrate, the residue formed during etching of the substrate, the method comprising the steps of:
heating the etched substrate to a temperature of at least 50°C; and
exposing the heated substrate to a plasma that removes the halogen-containing residue.
2. (Original) The method of claim 1, wherein the exposing step further comprises maintaining the temperature of the substrate between from about 50°C to about 450°C.
3. (Original) The method of claim 1, further comprising forming the plasma by energizing a gas mixture in a remote plasma reactor.
4. (Original) The method of claim 1, wherein the halogen-containing residue comprises bromine.
5. (Original) The method of claim 4, wherein the plasma comprises an oxygen-containing gas.
6. (Original) The method of claim 5, wherein the oxygen-containing gas comprises an oxidizing agent selected from the group consisting of oxygen, water vapor and ozone, and an additive selected from the group consisting of nitrogen, argon and helium.
7. (Original) The method of claim 1, wherein the halogen-containing residue comprises chlorine.

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8. (Original) The method of claim 7, wherein the plasma comprises a hydrogen-containing gas.
9. (Currently Amended) The method of claim 8, wherein the hydrogen-containing gas comprises at least one of hydrogen, water vapor, oxygen and nitrogen.
10. (Original) The method of claim 1, wherein the heating step comprises heating the substrate in a gas mixture of oxygen and nitrogen.
11. (Original) The method of claim 10, wherein the exposing step further comprises maintaining the temperature of the substrate at about 250°C.
12. (Original) The method of claim 8, wherein the flow ratio of oxygen to nitrogen is about 10:1.
13. (Original) The method of claim 9, wherein the flow ratio of oxygen to hydrogen is from about 150:1 to about 5:1, and the flow ratio of hydrogen to water vapor is from about 2:1 to about 1:1.
14. (Currently Amended) The method of claim 9, further comprising a forming gas having a ~~wherein the flow rate of forming gas is~~ from about 500 to 5000 sccm.
15. (Original) The method of claim 9, wherein the flow rate of water vapor is from about 100 to 3000 sccm.
16. (Original) The method of claim 9, wherein the flow ratio of oxygen to water vapor of from about 10:1 to 3:1.

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17. (Original) The method of claim 6, further comprising maintaining the oxygen-containing gas at a pressure of from about 0.5 to about 2 Torr.

18. (Original) The method of claim 6, wherein the duration of the exposing step is from about 15 to about 90 seconds.

19. (Original) The method of claim 9, further comprising maintaining the hydrogen-containing gas at a pressure of from about 0.5 to about 2 Torr.

20. (Original) The method of claim 9, wherein the duration of the exposing step is from about 15 to about 60 seconds.

21. (Original) A method for removing a halogen-containing residue from a substrate, the residue formed during etching of the substrate, the method comprising the steps of:

- providing a substrate having a film stack on the substrate with a patterned mask on the film stack;

- etching the film stack on the substrate;

- heating the substrate to a temperature of at least 150°C; and

- exposing the heated substrate to a plasma that removes the halogen-containing residue.

22. (Original) The method of claim 21, wherein the exposing step comprises maintaining the temperature of the substrate between 50°C and 400°C.

23. (Original) The method of claim 21, further comprising forming the plasma by energizing a gas mixture in a remote plasma reactor.

24. (Original) The method of claim 21, wherein the etching step comprises etching the polysilicon layer.

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25. (Original) The method of claim 21, wherein the etching step comprises etching the substrate with a gas mixture comprising a halogen gas and a reducing gas.

26. (Original) The method of claim 21, wherein the halogen-containing residue comprises bromine.

27. (Original) The method of claim 26, wherein the plasma comprises an oxygen-containing gas.

28. (Original) The method of claim 27, wherein the oxygen-containing gas comprises an oxidizing agent selected from the group consisting of oxygen, water vapor and ozone and an additive selected from the group consisting of nitrogen argon and helium.

29. (Original) The method of claim 21, wherein the halogen-containing residue comprises chlorine.

30. (Original) The method of claim 29, wherein the plasma comprises a hydrogen-containing gas.

31. (Original) The method of claim 30, wherein the hydrogen-containing gas comprises hydrogen, water vapor, oxygen and nitrogen.

32. (Original) The method of claim 31, wherein the heating step comprises heating the substrate in a gas mixture of oxygen and nitrogen.

33-34. (Cancelled)

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